
EXAMINATION OUTLINE SUBMITTAL

FOR THE FERMI RETAKE EXAMINATION - AUGUST 2006

Donald K. Cobb
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DTE Energy



June 29, 2006
NRC-06-0050

Mr. Hironori Peterson, Chief
Operations Branch
Division of Reactor Safety
U. S. NRC Region III
Suite 210
2443 Warrenville Road
Lisle, Illinois 60532-4352

Dear Mr. Peterson:

Enclosed please find the following examination materials submitted to the NRC in preparation for the upcoming Fermi 2 Initial License Retake Examination scheduled to occur during the week of August 7, 2006:

- Seventy-five (75) question Reactor Operator Examination (Hardcopy w/References)
- Plant Procedures (Compact Disc)
- Appropriate quality verification checklists from Revision 9, NUREG 1021

The examination materials were developed using the appropriate guidance contained in Revision 9, NUREG 1021. These materials shall be withheld from public disclosure until after the examinations are complete.

We look forward to working with you during this process. If you have any questions or comments regarding the contents of the items listed above, please contact Mr. Timothy Horan at (734) 586-4961.

Sincerely,

A handwritten signature in black ink, appearing to read "Donald K. Cobb", written over the word "Sincerely,".

Enclosure

JUL 05 2006

Facility: Fermi-2		Date of Examination: 8/11/2006			
Item	Task Description	Initials			
		a	b*	c#	
1. W R I T T E N	a. Verify that the outline(s) fit(s) the appropriate model, in accordance with ES-401.	B	AD	RW	
	b. Assess whether the outline was systematically and randomly prepared in accordance with Section D.1 of ES-401 and whether all K/A categories are appropriately sampled.	B	AD	RW	
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.	B	AD	RW	
	d. Assess whether the justifications for deselected or rejected K/A statements are appropriate.	B	AD	RW	
2. S I M U L A T O R	a. Using Form ES-301-5, verify that the proposed scenario sets cover the required number of normal evolutions, instrument and component failures, technical specifications, and major transients.	N/A	NA	N/A	
	b. Assess whether there are enough scenario sets (and spares) to test the projected number and mix of applicants in accordance with the expected crew composition and rotation schedule without compromising exam integrity, and ensure that each applicant can be tested using at least one new or significantly modified scenario, that no scenarios are duplicated from the applicants' audit test(s), and scenarios will not be repeated on subsequent days.	N/A	N/A	N/A	
	c. To the extent possible, assess whether the outline(s) conform(s) with the qualitative and quantitative criteria specified on Form ES-301-4 and described in Appendix D.	N/A	N/A	N/A	
3. W / T	a. Verify that the systems walk-through outline meets the criteria specified on Form ES-301-2: (1) the outline(s) contain(s) the required number of control room and in-plant tasks distributed among the safety functions as specified on the form (2) task repetition from the last two NRC examinations is within the limits specified on the form (3) no tasks are duplicated from the applicants' audit test(s) (4) the number of new or modified tasks meets or exceeds the minimums specified on the form (5) the number of alternate path, low-power, emergency, and RCA tasks meet the criteria on the form	N/A	NA	N/A	
	b. Verify that the administrative outline meets the criteria specified on Form ES-301-1: (1) the tasks are distributed among the topics as specified on the form (2) at least one task is new or significantly modified (3) no more than one task is repeated from the last two NRC licensing examinations	N/A	NA	N/A	
	c. Determine if there are enough different outlines to test the projected number and mix of applicants and ensure that no items are duplicated on subsequent days.	N/A	NA	N/A	
4. G E N E R A L	a. Assess whether plant-specific priorities (including PRA and IPE insights) are covered in the appropriate exam section.	B	AD	RW	
	b. Assess whether the 10 CFR 55.41/43 and 55.45 sampling is appropriate.	B	AD	RW	
	c. Ensure that K/A importance ratings (except for plant-specific priorities) are at least 2.5.	B	AD	RW	
	d. Check for duplication and overlap among exam sections.	B	AD	RW	
	e. Check the entire exam for balance of coverage.	B	AD	RW	
	f. Assess whether the exam fits the appropriate job level (RO or SRO).	B	AD	RW	
a. Author		Lynn H. Barker / <i>Lynn H. Barker</i>		Date	6/16/2006
b. Facility Reviewer (*)		Douglas J. Pierce / <i>Douglas J. Pierce</i>		Date	6/16/2006
c. NRC Chief Examiner (#)		Raymond K. Walton / <i>Raymond K. Walton</i>		Date	6/30/2006
d. NRC Supervisor		Hiranda Peterson / <i>Hiranda Peterson</i>		Date	6/30/06

NOTE: # Independent NRC Reviewer initial items in Column "c"; chief examiner concurrence required.

* Noted two identical KAs for two different items: Tier 1 Grp 1 # 21 and Tier 1 Grp 2 # 33
 will review actual exam material when submitted for potential replacement, as needed - JF

Facility Name: Fermi 2		Date of Exam: 8/11/2006																
Tier	Group	RO K/A Category Points												Total	SRO-Only Points			
		K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G *	A2		G*	Total		
1. Emergency & Abnormal Plant Evolutions	1	3	4	4				3	3				3	20	0	0	0	
	2	1	2	1	N/A			1	1	N/A			1	7	0	0	0	
	Tier Totals	4	6	5				4	4				4	27	0	0	0	
2. Plant Systems	1	2	2	2	3	3	3	3	2	2	2	2	2	26	0	0	0	
	2	1	1	1	1	1	2	1	1	1	1	1	1	12	0	0	0	
	Tier Totals	3	3	3	4	4	5	4	3	3	3	3	3	38	0	0	0	
3. Generic Knowledge and Abilities Categories					1	2	3	4						10	1	2	3	4
					3	3	2	2							0	0	0	0

Note: 1. Ensure that at least two topics from every applicable K/A category are sampled within each tier of the RO and SRO-only outlines (i.e., except for one category in Tier 3 of the SRO-only outline, the "Tier Totals" in each K/A category shall not be less than two).

2. The point total for each group and tier in the proposed outline must match that specified in the table. The final point total for each group and tier may deviate by ± 1 from that specified in the table based on NRC revisions. The final RO exam must total 75 points and the SRO-only exam must total 25 points.

3. Systems/evolutions within each group are identified on the associated outline; systems or evolutions that do not apply at the facility should be deleted and justified; operationally important, site-specific systems that are not included on the outline should be added. Refer to ES-401, Attachment 2, for guidance regarding the elimination of inappropriate K/A statements.

4. Select topics from as many systems and evolutions as possible; sample every system or evolution in the group before selecting a second topic for any system or evolution.

5. Absent a plant-specific priority, only those K/As having an importance rating (IR) of 2.5 or higher shall be selected. Use the RO and SRO ratings for the RO and SRO-only portions, respectively.

6. Select SRO topics for Tiers 1 and 2 from the shaded systems and K/A categories.

7.* The generic (G) K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system.

8. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings (IRs) for the applicable license level, and the point totals (#) for each system and category. Enter the group and tier totals for each category in the table above; if fuel handling equipment is sampled in other than Category A2 or G* on the SRO-only exam, enter it on the left side of Column A2 for Tier 2, Group 2 (Note #1 does not apply). Use duplicate pages for RO and SRO-only exams.

9. For Tier 3, select topics from Section 2 of the K/A catalog, and enter the K/A numbers, descriptions, IRs, and point totals (#) on Form ES-401-3. Limit SRO selections to K/As that are linked to 10 CFR 55.43.

ES-401		BWR Examination Outline							Form ES-401-1	
Emergency and Abnormal Plant Evolutions - Tier 1/Group 1 (RO)										
Q#	E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#
11	295001 Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4		0 1					Recirculation system	3.6	1
12	295003 Partial or Complete Loss of AC / 6			0 5				Reactor SCRAM	3.7	1
13	295004 Partial or Total Loss of DC Pwr / 6				0 2			Systems necessary to assure safe plant shutdown	3.8	1
14	295005 Main Turbine Generator Trip / 3					0 6		Feedwater temperature	2.6	1
15	295006 SCRAM / 1						04.0 4	Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.	4	1
16	295016 Control Room Abandonment / 7		0 1					Remote shutdown panel: Plant-Specific	4.4	1
17	295018 Partial or Total Loss of CCW / 8	0 1						Effects on component/system operations	3.5	1
18	295019 Partial or Total Loss of Inst. Air / 8			0 1				Backup air system supply: Plant-Specific	3.3	1
19	295021 Loss of Shutdown Cooling / 4				0 5			Reactor recirculation	3	1
20	295023 Refueling Acc / 8					0 1		Area radiation levels	3.6	1
21	295024 High Drywell Pressure / 5						02.2 2	Knowledge of limiting conditions for operations and safety limits	3.4	1
22	295025 High Reactor Pressure / 3	0 6						Pressure effects on reactor water level	3.5	1
23, 30	295026 Suppression Pool High Water Temp. / 5		0 3	0 4				Suppression chamber pressure: Mark-I&II, SBLC injection	3.2, 3.7	2
	295027 High Containment Temperature / 5							DELETED, SEE ES-401-4		0
24	295028 High Drywell Temperature / 5			0 1				Emergency depressurization	3.6	1
25	295030 Low Suppression Pool Wtr Lvl / 5				0 1			ECCS systems (NPSH considerations) Plant-Specific	3.6	1
26	295031 Reactor Low Water Level / 2					0 4		Adequate core cooling	4.6	1
27	295037 SCRAM Condition Present and Power Above APRM Downscale or Unknown / 1						04.0 6	Knowledge symptom based EOP mitigation strategies.	3.1	1
28	295038 High Off-site Release Rate / 9	0 2						Protection of the general public	4.2	1
29	600000 Plant Fire On Site / 8		0 4					Breakers, relays, and disconnects	2.5	1
K/A Category Totals:		3	4	4	3	3	3	Group Point Total:	20	

ES-401		BWR Examination Outline							Form ES-401-1	
Emergency and Abnormal Plant Evolutions - Tier 1/Group 2 (RO)										
Q#	E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#
	295002 Loss of Main Condenser Vac / 3									0
31	295007 High Reactor Pressure / 3			0 4				Safety/relief valve operation: Plant-Specific	4	1
32	295008 High Reactor Water Level / 2	0 2						Component erosion/damage	2.8	1
	295009 Low Reactor Water Level / 2									0
33	295010 High Drywell Pressure / 5						02. 22	Knowledge of limiting conditions for operations and safety limits.	3.4	1
	295011 High Containment Temp / 5							DELETED - SEE ES-401-4		0
34	295012 High Drywell Temperature / 5		0 2					Drywell cooling	3.6	1
35	295013 High Suppression Pool Temp. / 5					0 1		Suppression: pool temperature	3.8	1
	295014 Inadvertent Reactivity Addition / 1									0
	295015 Incomplete SCRAM / 1									0
	295017 High Off-site Release Rate / 9									0
	295020 Inadvertent Cont. Isolation / 5 & 7									0
	295022 Loss of CRD Pumps / 1									0
	295029 High Suppression Pool Wtr Lvl / 5									0
36	295032 High Secondary Containment Area Temperature / 5		0 4					PCIS/NSSSS	3.6	1
	295033 High Secondary Containment Area Radiation Levels / 9									0
37	295034 Secondary Containment Ventilation High Radiation / 9				0 4			SBGT/FRVS: Plant-Specific	4.1	1
	295035 Secondary Containment High Differential Pressure / 5									0
	295036 Secondary Containment High Sump/Area Water Level / 5									0
	500000 High CTMT Hydrogen Conc. / 5									0
K/A Category Totals:		1	2	1	1	1	1	Group Point Total:		7

ES-401		BWR Examination Outline Plant Systems - Tier 2/Group 1 (RO)												Form ES-401-1	
Q#	E/APE # / Name / Safety Function	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)	IR	#
38	203000 RHR/LPCI: Injection Mode				0 1								Automatic system initiation/ injection	4.2	1
39	205000 Shutdown Cooling					0 2							Valve operation	2.8	1
40	206000 HPCI						0 2						D.C. power: BWR-2, 3, 4	3.3	1
	207000 Isolation (Emergency) Condenser												DELETED SEE ES-401-4		0
41	209001 LPCS							0 7					Emergency generator loading	3	1
	209002 HPCS												DELETED SEE ES-401-4		0
59, 42	211000 SLC						0 3		0 6				A.C. power: Valve openings	3.2; 3.1	2
60, 43	212000 RPS							0 4		0 5			RPS bus voltage: Plant-Specific; SCRAM instrument volume level	2.8; 3.9	2
61, 44	215003 IRM			0 1								0 5	RPS; Trip bypasses	3.9; 3.4	2
45	215004 Source Range Monitor											01. 30	Ability to locate and operate components / including local controls.	3.9	1
46	215005 APRM / LPRM	1 6											Flow converter/comparator network: Plant-Specific	3.3	1
47	217000 RCIC		0 1										Motor operated valves	2.8	1
48	218000 ADS			0 1									Restoration of reactor water level after a break that does not depressurize the reactor when required	4.4	1
49	223002 PCIS/Nuclear Steam Supply Shutoff				0 6								Once initiated, system reset requires deliberate operator action	3.4	1
50	239002 SRVs					0 6							Vacuum breaker operation	2.7	1
51	259002 Reactor Water Level Control						0 5						Reactor water level input	3.5	1
52	261000 SGTS							0 4					Secondary containment differential pressure	3	1
62, 53	262001 AC Electrical Distribution					0 1			0 2				Principle involved with paralleling two A.C. sources; Loss of coolant accident	3.1; 3.6	2
54	262002 UPS (AC/DC)									0 1			Transfer from preferred to alternate source	2.8	1
55	263000 DC Electrical Distribution										0 1		Major breakers and control power fuses: Plant-Specific	3.3	1
63, 56	264000 EDGs				0 1							04. 31	Emergency generator trips (normal); Knowledge of annunciators alarms and indications, and use of the response instructions.	3.5; 3.3	2
57	300000 Instrument Air	0 5											Main Steam Isolation Valve air	3.1	1
58	400000 Component Cooling Water		0 1										CCW pumps	2.9	1
															0
K/A Category Totals:		2	2	2	3	3	3	3	2	2	2	2	Group Point Total:		26

ES-401		BWR Examination Outline													Form ES-401-1	
		Plant Systems - Tier 2/Group 2 (RO)														
Q#	E/APE # / Name / Safety Function	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)	IR	#	
64	201001 CRD Hydraulic							0	1				CRD drive water header pressure	3.1	1	
	201002 RMCS														0	
	201003 Control Rod and Drive Mechanism														0	
	201004 RSCS												DELETED SEE ES-401-4		0	
	201005 RCIS												DELETED SEE ES-401-4		0	
	201006 RWM														0	
	202001 Recirculation														0	
65	202002 Recirculation Flow Control											01. 28	Knowledge of the purpose and function of major system components and controls.	3.2	1	
66	204000 RWCU		0	8									SBLC	3.7	1	
	214000 RPIS														0	
	215001 Traversing In-core Probe														0	
67	215002 RBM		0	3									APRM channels: BWR-3, 4, 5	2.8	1	
68	216000 Nuclear Boiler Inst.							0	8				Elevated containment temperature	3.2	1	
	219000 RHR/LPCI: Torus/Pool Cooling Mode														0	
	223001 Primary CTMT and Aux.														0	
69	226001 RHR/LPCI CTMT Spray Mode				1	0							Spray flow cooling	2.9	1	
	230000 RHR/LPCI: Torus/Pool Spray Mode														0	
	233000 Fuel Pool Cooling/Cleanup														0	
	234000 Fuel Handling Equipment														0	
70	239001 Main and Reheat Steam									0	1		Isolation of main steam system	4.2	1	
	239003 MSIV Leakage Control												DELETED SEE ES-401-4		0	
71	241000 Reactor/Turbine Pressure Regulator						0	8					Reactor power	3.6	1	
	245000 Main Turbine Gen. / Aux.														0	
72	256000 Reactor Condensate									0	3		Hotwell level controls	3.2	1	
73	259001 Reactor Feedwater					0	3						Turbine operation: TDRFP's-Only	2.8	1	
	268000 Radwaste														0	
74	271000 Offgas						0	8					Condenser air removal system	2.9	1	
	272000 Radiation Monitoring														0	
	286000 Fire Protection														0	
	288000 Plant Ventilation														0	
	290001 Secondary CTMT														0	
	290003 Control Room HVAC														0	
75	290002 Reactor Vessel Internals			0	3								Reactor power	3.3	1	
K/A Category Totals:		1	1	1	1	1	2	1	1	1	1	1	Group Point Total:		12	

Facility Name: Fermi 2 Date of Exam: 8/11/2006

Q#	Category	K/A #	Topic	RO		SRO-Only	
				IR	#	IR	#
1	1. Conduct of Operations	2.1. 22	Ability to determine Mode of Operation.	2.8	1		
2		2.1. 11	Knowledge of less than one hour technical specification action statements for systems.	3	1		
3		2.1. 29	Knowledge of how to conduct and verify valve lineups.	3.4	1		
		2.1.					
		2.1.					
		2.1.					
		Subtotal				3	
4	2. Equipment Control	2.2. 11	Knowledge of the process for controlling temporary changes.	2.5	1		
5		2.2. 30	Knowledge of RO duties in the control room during fuel handling such as alarms from fuel handling area / communication with fuel storage facility / systems operated from the control room in support of fueling operations / and supporting instrumentation	3.5	1		
6		2.2. 22	Knowledge of limiting conditions for operations and safety limits.	3.4	1		
		2.2.					
		2.2.					
		2.2.					
		Subtotal				3	
7	3. Radiation Control	2.3. 04	Knowledge of radiation exposure limits and contamination control, including permissible levels in excess of those authorized.	2.5	1		
8		2.3. 02	Knowledge of facility ALARA program.	2.5	1		
		2.3.					
		2.3.					
		2.3.					
		2.3.					
		Subtotal				2	
9	4. Emergency Procedures / Plan	2.4. 11	Knowledge of abnormal condition procedures.	3.4	1		
10		2.4. 20	Knowledge of operational implications of EOP warnings, cautions, and notes.	3.3	1		
		2.4.					
		2.4.					
		2.4.					
		2.4.					
		Subtotal				2	
Tier 3 Point Total					10		0

Summary of Systematic Random Selection Process

1. Random Number Generator was used using Excel Spreadsheet "RANDBETWEEN" function to generate all random selections.
2. For All Tiers, Random Selection was used to generate KA Topics and Statements.
3. Commencing with Tier 1 Group 1, the random number 2 was generated for the first APE, 295001. An "AK2" statement was randomly chosen using the Random Number Generator.
4. Systematic and uniform sampling was assured by progressing through KA Categories on the ES-401-1 form with the exception of APE 295016. No "AK1" category topic exists. Randomly selected an "AK2" statement and reverted to the previously described sequence on the next APE. This was noted on ES-401-4.
5. For Tier 1 Group 2, random number 2 was generated to select the first KA Category (K2). Random selection produced topics and statements with sequentially selected KA Categories (K1, K2, K3, A1, A2, and G).
6. For Tier 2 Group 1, random number 7 was generated to select the first KA Category (A1). Random selection produced statements with sequentially selected KA Categories (K1, K2, K3, K4, K5, K6 A1, A2, A3, A4 and G).
7. For Tier 2 Group 2, random number 6 was generated to select the first KA Category (K6). Random selection produced systems and statements with sequentially selected KA Categories (K1, K2, K3, A1, A2, and G).

